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Introduction: objectivity in science

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Objectivity is a buzz word in philosophy of science: it permeates various metaphysical and epistemological discussions, and it helps to build public trust in science. The epistemic authority of science seems to depend on the degree to which science is objective. Conversely, “just subjective” or “not objectively verified” are labels that are often used by science skeptics and deniers to dismiss the scientific state of the art in a discipline (e.g., climate science). Understanding scientific objectivity is crucial for making sense of the debate about the reliability of scientific research.

Central philosophical questions about objectivity in science are: What makes a scientific claim objective? Can the ideal of objectivity be attained at all? Should we even strive for it? And so on. Today, most philosophers see objectivity as a multi-faceted concept that can apply to scientific entities (theories, functions, measurements) as well as to individual reasoning processes and the social aspects of knowledge production.

All these questions were discussed at the 8th Munich–Sydney–Tilburg (MuST) conference in Tilburg, 10–12 June 2015. The papers in this special issue were presented at the conference and selected for publication through a standard double-blind peer-review process. They approach the topic of scientific objectivity from various angles: the relation to pluralism and relativism, natural laws, epistemic communities, and problems of the special sciences.

Max Bialek defends David Lewis’ best system analysis of natural laws against the objection that it cannot make sense of the intuition that natural laws are objective. After

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all, what counts as “best” depends on how a scientist measures and trades off criteria such as simplicity and goodness-of-fit. There may be more than one set of natural laws. Bialek shows that one need not adopt extreme positions about the relativity of the best system analysis in order to answer this criticism.

Jaana Elgi discusses how philosophical proposals about the social organization of science should reflect the increasing democratization of science. She studies the professional ethics of American archaeology as an example where politically motivated and epistemically motivated changes converge in practice.

Inkeri Koskinen investigates how social accounts of objectivity need to be changed in the light of the democratization of scientific inquiry, in particular in situations where one cannot readily identify the relevant epistemic community. She combines her critique of prevalent accounts of objectivity with a case study where indigenous communities are involved in the process of knowledge production.

Martin Kusch discusses the philosophical implications of a particular form of epistemic relativism: namely the idea that it is impossible to show in a non-question-begging way that one epistemic system is superior to (all) others. Particular attention is paid to the “Problem of the Criterion”: the view that the attempt to justify particular standards as objective runs into a regress problem.

David Ludwig conducts a case study about local knowledge in indigenous communities, using it as a means of evaluating the current debate about scientific objectivity. He concludes, contrary to common wisdom, that local knowledge (as opposed to universal knowledge) can often qualify as objective.

Femke Truijens tackles the view that differences between pre- and post-treatment symptom levels in medicine offer a procedurally objective quantification of treatment efficacy. She uses psychotherapy as a case to argue that this method operates on a problematic numerical basis, due to the difficulties to measure symptom levels in an objective way.

Finally, Marcel Weber engages with Searle’s thesis that biological functions cannot be objective, due to their dependency on the goals that we value (e.g., life and survival). Against Searle, Weber argues that functions do not ontologically depend on values and that function statements are made true by supposedly objective features such as causal dependence, part-whole relations, or mechanistic constitution.

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